

REMARKS

The present response is to the Office Action mailed in the above-referenced case on May 02, 2006, made final. Claims 31, 33 and 34 are standing for examination. Claims 31 and 34 are objected to due to informalities. Claims 31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cao (US 6,721,269) hereinafter Cao in view of McAllister (US 6,697,329) hereinafter McAllister.

Applicant acknowledges the Examiner's comments regarding claim 34. The Examiner is correct, applicant improperly removed limitations from the preamble in the last Response filed. Applicant apologizes and appreciates the Examiner's understanding, for the sake of the present round of prosecution, that claim 34 was amended to remove limitations from the preamble including; "a label-switching sub-network with one ingress node and one egress node, with at least two nodes internal to the sub-network connected by a plurality of parallel links, the system comprising".

Applicant has studied the Examiner's objections, rejections, provided references and remarks in the instant Office Action. In response, applicant herein amends the independent claims to positively recite that there are a sufficient number of LSPs created between the ingress node to the egress node such that the sufficient number of LSPs are created based on a requirement to balance the distribution of LSPs over the physical links and each LSP created is utilized by the sub-network to balance the load of packet flow through the network. Applicant also provides arguments which clearly show the art of Cao and McAllister fail to teach all of subject matter contained in applicant's claims, as amended.

Applicant argues that Cao specifically teaches explicitly routed label switched paths, paths S-A-B-E, and S-C-D-E in the example of FIG. 1, are established from the ingress router, that is, router S, to the egress router, router E. Once both paths are established, datagrams are transmitted along both paths, with the egress router choosing the one of the paths as its primary source of datagrams. Should the primary path fail, due, for example to a cut fiber along the S-A-B-E path, router IE switches to a secondary route, the S-C-D-E route (col. 6, lines 5-16). Alternatively, applicant teaches and claims under IP forwarding, in the

subnetwork 122 of FIG. 3, router A would look up the destination address in a packet for a destination coupled to node Y. The router A decides that the shortest path to Y follows one of the links from A to B. It must select one of five equivalent links for transmission of each packet in such a way as to balance the traffic load over all (pg. 11, lines 19-25).

Regarding Cao the Examiner states that Cao is not limited to an equal number of paths (col. 2, lines 48-67 col. 11, lines 16-43). The Examiner states that Cao teaches that the invention is not limited to the embodiment to the precise forms disclosed. Applicant argues that these types of general statements made in disclosures of references certainly cannot be used as an enabling teaching to read on applicant's invention, as claimed. Cao consistently teaches throughout the disclosure "a primary path and a secondary path" for each router in the network. This would be understood by those with skill in the art as an equal number.

Applicant argues that a plurality of paths for load balancing purposes supports the limitations of establishing a plurality of paths wherein each sub-network node is connected by one or more physical parallel links and the number of LSPs created is equal to the least-common multiple of the number of links between each individual internal sub-network node in the node path, wherein the number of links between the sub-network nodes may differentiate, as claimed.

Applicant teaches that the LCM computes the minimal number of paths needed to balance the distribution of paths over a plurality of physical links, this minimal number may be much fewer than the most desirable number. For example, if the number of hops from A to B and B to G in FIG. 3 were changed to 8, $\text{LCM}(8, 8, 2)$ gives 8 as the number of paths needed to ensure equal distribution of paths over links on each hop. But if one of the links from B to G were to fail, then $\text{LCM}(8, 7, 2) = 56$. In this situation it becomes impossible to balance the load over the remaining links using only eight switched paths. In this example, a number of paths on the order of eight times the LCM may be required to ensure the load can still be a balanced after one or more link failures.

Applicant believes that claim 34 as amended and argued above is now clearly patentable over Cao, and respectfully requests that the reference be withdrawn. McAllister also fails to teach applicant's claims, as amended. Applicant's claim 31

recites the method in accordance with applicant's system claim 34 and has been similarly amended. Applicant believes base claims 31 and 34 are then unarguably patentable as amended and argued above. Depending claim 33 is then patentable on its own merits, or at least as depended from a patentable claim.

It is therefore respectfully requested that this application be reconsidered, the claims be allowed, and that this case be passed quickly to issue. If there are any time extensions needed beyond any extension specifically requested with this amendment, such extension of time is hereby requested. If there are any fees due beyond any fees paid with this amendment, authorization is given to deduct such fees from deposit account 50-0534.

Respectfully Submitted,
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